

| Epoch. | Observer. | θ_0 | θ_c | $\theta_0 - \theta_c$ | ρ_0 | ρ_c | $\rho_0 - \rho_c$ |
|----------|-----------|--------------------|---------------------|-----------------------|--------------------|--------------------|---------------------|
| 1871.386 | Russell | 3 ^o 8 | 4 ^o 3 | -0 ^o 5 | 1 ^{''} 18 | 1 ^{''} 66 | -0 ^{''} 48 |
| 1873.364 | „ | 4 ^o 2 | 3 ^o 6 | +0 ^o 6 | 2 ^{''} 29 | 1 ^{''} 76 | +0 ^{''} 53 |
| 1874.260 | „ | 1 ^o 6 | 3 ^o 3 | -1 ^o 7 | 1 ^{''} 61 | 1 ^{''} 80 | -0 ^{''} 19 |
| 1876.63 | Ellery | 8 ^o 5 | 2 ^o 6 | (+5 ^o 9) | 1 ^{''} 3 | 1 ^{''} 88 | -0 ^{''} 58 |
| 1880.44 | Russell | 1 ^o 3 | 1 ^o 6 | -0 ^o 3 | 1 ^{''} 39 | 1 ^{''} 97 | -0 ^{''} 58 |
| 1882.22 | Tebbutt | 2 ^o 1 | 1 ^o 1 | +1 ^o 0 | ... | ... | ... |
| 1887.526 | Pollock | 358 ^o 5 | 359 ^o 6 | -1 ^o 1 | 1 ^{''} 75 | 1 ^{''} 89 | -0 ^{''} 14 |
| 1887.583 | Tebbutt | 359 ^o 1 | 359 ^o 6 | -0 ^o 5 | 1 ^{''} 76 | 1 ^{''} 89 | -0 ^{''} 13 |
| 1888.22 | „ | 360 ^o 4 | 359 ^o 44 | +0 ^o 96 | 1 ^{''} 56 | 1 ^{''} 86 | -0 ^{''} 30 |
| 1888.325 | „ | ... | 359 ^o 41 | ... | 1 ^{''} 70 | 1 ^{''} 86 | -0 ^{''} 16 |
| 1888.335 | „ | 358 ^o 9 | 359 ^o 41 | -0 ^o 51 | 1 ^{''} 83 | 1 ^{''} 86 | -0 ^{''} 03 |
| 1888.605 | „ | ... | 359 ^o 3 | ... | 2 ^{''} 73 | 1 ^{''} 85 | +0 ^{''} 88 |
| 1888.61 | „ | 359 ^o 7 | 359 ^o 3 | +0 ^o 4 | ... | 1 ^{''} 85 | ... |
| 1889.323 | Pollock | 359 ^o 1 | 359 ^o 1 | 0 ^o 0 | 1 ^{''} 87 | 1 ^{''} 81 | +0 ^{''} 06 |
| 1890.361 | Tebbutt | 359 ^o 0 | 358 ^o 8 | +0 ^o 2 | 1 ^{''} 84 | 1 ^{''} 76 | +0 ^{''} 08 |

According to the above orbit the distance is now rapidly diminishing, and about the year 1901 will be reduced to about 0^{''}05, when it will probably pass beyond the reach of all existing telescopes.

Assuming the mass of the system to be equal to the mass of the Sun, the “hypothetical parallax” will be

$$\pi = aP^{-\frac{2}{3}} = 0^{''}096$$

For a mass equal to twice the Sun’s mass, the parallax would be 0^{''}076.

Note on the Orbit of a Centauri. By E. B. Powell, M.A., C.S.I.

In the *Monthly Notices*, No. 6, of April 1886, I submitted a paper on the orbit of a *Centuari*, in which the following elements were put forward :—

$$\begin{array}{ll} P = 87.438 \text{ years} & \gamma = 79^{\circ} 47' 8'' \\ T = 1875.447 & \Omega = 25^{\circ} 49' 38'' \\ e = .544326 & \lambda = 48^{\circ} 59' 17'' \end{array}$$

and at the end of the paper I pointed out that in six or eight years, provided careful observations were taken, it would probably become apparent whether the period of that binary included only some seventy-six years or extended over eighty-six years or more. I cannot help thinking that now the evidence is

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pretty decisive in support of the period extending over the longer time.

Taking the epochs from 1881 onwards, the following table gives a comparison, so far as the position-angle is concerned, of the results of observation (1) with those of the Downing-Elkin orbit, and (2) with those of the elements specified above.

Table of Comparison.

| Observer. | Epoch 1800+ | θ_0 | Downing-Elkin Orbit. | | My Orbit of 1886. | |
|----------------|----------------|------------|-------------------------|-----------------------|----------------------|-----------------------|
| | | | θ_c | $\theta_0 - \theta_c$ | θ_c | $\theta_0 - \theta_c$ |
| Tebbutt | 81.655 | 193°15 | 194°14 | - 0°99 | 193°55 | - 0°40 |
| Gill and Elkin | 83.500 | 198°00 | 198°89 | - 0°89 | 198°14 | - 0°14 |
| Tebbutt | 84.533 | 199°80 | 200°53 | - 0°73 | 199°75 | + 0°05 |
| „ | 85.580 | 201°02 | 201°86 | - 0°84 | 201°03 | - 0°01 |
| Pollock | 86.517 | 202°17 | 202°66 | - 0°49 | 201°97 | + 0°20 |
| Tebbutt | 86.603 | 201°80 | 202°89 | - 1°09 | 202°05 | - 0°25 |
| „ | 87.681 | 202°20 | 203°81 | - 1°61 | 202°96 | - 0°76 |
| „ | 88.467 | 203°20 | 204°47 | - 1°27 | 203°55 | - 0°35 |
| „ | 90.519 | 205°00 | 206°01 | - 1°01 | 204°87 | + 0°13 |
| „ | 91.587 | 206°09 | 206°69 | - 0°60 | 205°46 | + 0°63 |

It may be well to note that the annual angular motion between successive epochs, omitting 1886.517, is as follows, according to the two orbits:—

| Downing-Elkin. | Orbit of 1886. | | Downing-Elkin. | Orbit of 1886. |
|----------------|-------------------|-------------------------------|----------------|--|
| 2.57 | 2.49 | Interval nearly two years. | .85 | .84 |
| | | | .84 | .75 |
| 1.59 | 1.56 | | .75 | .64 |
| 1.27 | 1.22 | | | Interval slightly more than two years. |
| 1.01 | 1.00 | | .64 | |
| | | | | .55 |

It will be seen that the Downing-Elkin orbit of 76.222 years now puts the comes a degree or so in advance of the observed position, while the orbit of 87.438 years generally agrees with the measured angles within what may perhaps be termed tolerably fair limits, having regard to the errors incidental to taking measures, the latest angle observed being in all probability somewhat too large. In making this remark I by no means imply that the elements given at the commencement of this note are absolutely correct; I believe they will all be found to need modification; but I consider the period is within (say) a year of the truth, and that the changes required in the others will be only small.

The semi-axis major, 18''89, arrived at by me in 1886, is

undoubtedly too great. It is to be recollected that till lately, omitting from notice Sir John Herschel's observations, the distance measures, from which the value of the semi-axis has to be drawn, were generally much less than the quantity to be derived from them; consequently, a small error in a measure entailed a comparatively large one on the semi-axis. Now, however, for a good many years, the semi-axis will be less than the distance measures; therefore the former will no doubt be obtained with very considerable accuracy. So far as I can judge at present, the semi-axis major will not differ much from $18''.4$.

It is to be hoped that observers occupying favourable localities will spare some portion of their time for the observation of a *Centauri*. Of late years, so far as I am aware, Mr. Tebbutt has been left almost alone to occupy the field; and all who are interested in the orbit of that binary must feel that they are much indebted to that astronomer for his assiduous attention to the star.

Streatham Hill:
1892 April.

Estimations of the magnitude of Nova Aurigæ.
By J. Gerh. Lohse.

1892 February 1, $6^h 25^m$ G.M.T., 26 Aurigæ = Nova, 26 Aurigæ 1 Nova, Nova 3 *b*. The star *b* is south preceding of Nova Aurigæ.

February 3, $11^h 10^m$ G.M.T., Nova 2 χ Aurigæ.

February 4, $6^h 40^m$ G.M.T., Nova = χ Aurigæ.

February 5, $7^h 20^m$ G.M.T., Nova 3, perhaps 5, χ Aurigæ.

February 6, $7^h 10^m$ G.M.T., Nova 7 χ Aurigæ.

February 8, $8^h 0^m$ G.M.T., Nova Aurigæ not certainly identified owing to the close neighbourhood of the Moon. If the identification is right Nova is 8 χ Aurigæ.

February 9, $10^h 25^m$ G.M.T., Nova 3 χ Aurigæ, $10^h 40^m$ G.M.T., Nova 2 χ Aurigæ.

February 10, $7^h 40^m$ G.M.T., Nova = χ Aurigæ.

February 22, $10^h 48^m$ G.M.T., 26 Aurigæ 3 Nova, Nova = *b*, Nova is a little red.

March 23, $11^h 0^m$ G.M.T., Nova has become invisible.

March 24, $10^h 30^m$ G.M.T., Nova is invisible.

The observations were made with an opera-glass by Schröder.

The magnitudes of the comparison stars are according to the Bonn Durch-Musterung: χ Aurigæ = 4.8 magnitude, 26 Aurigæ = 6.0 magnitude, *b* = 6.2 magnitude.

The observations make *b* .3 of a magnitude fainter than 26 Aurigæ, 6.3 has therefore been adopted for the magnitude of